



Transportation Operations Data Portal

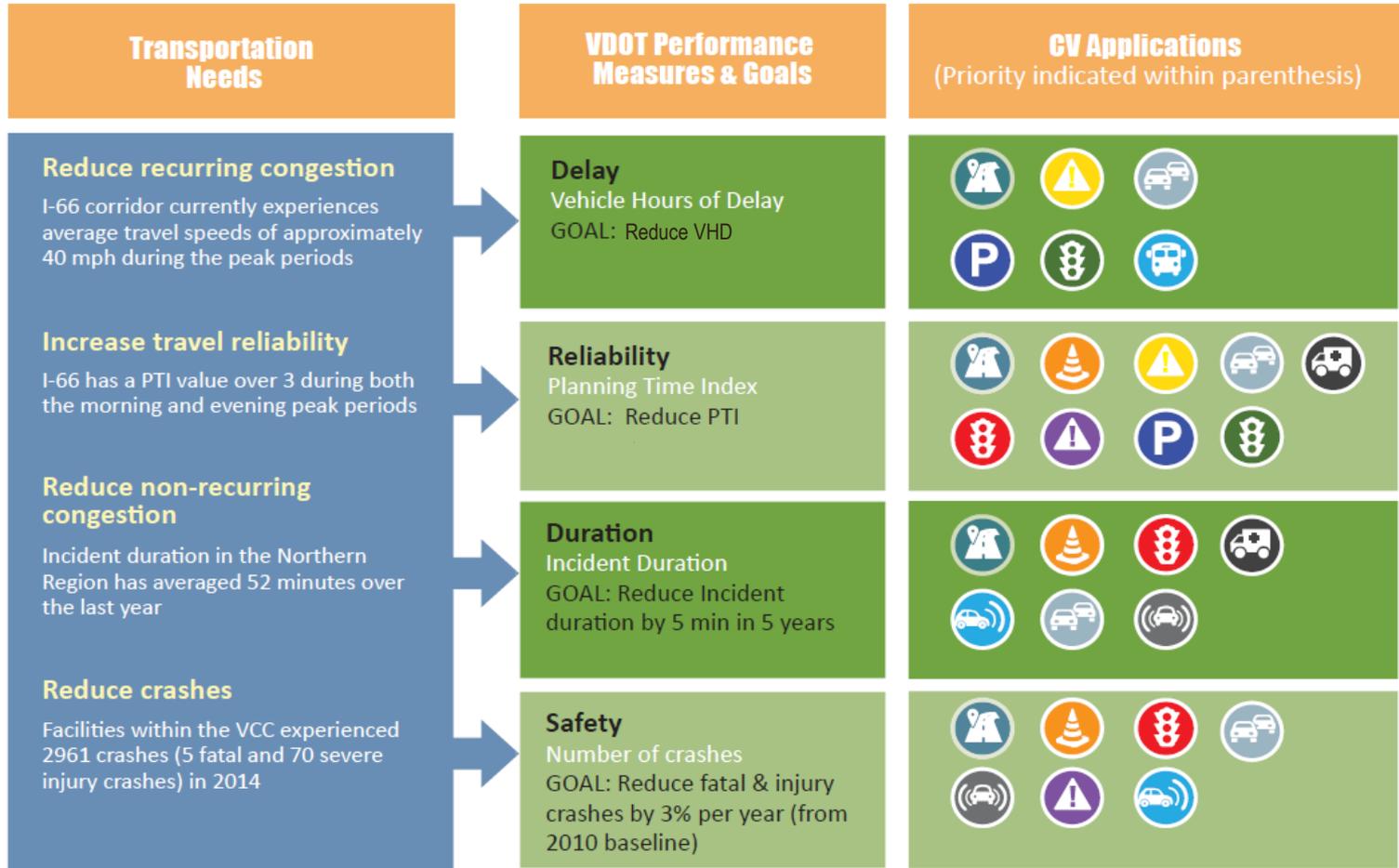
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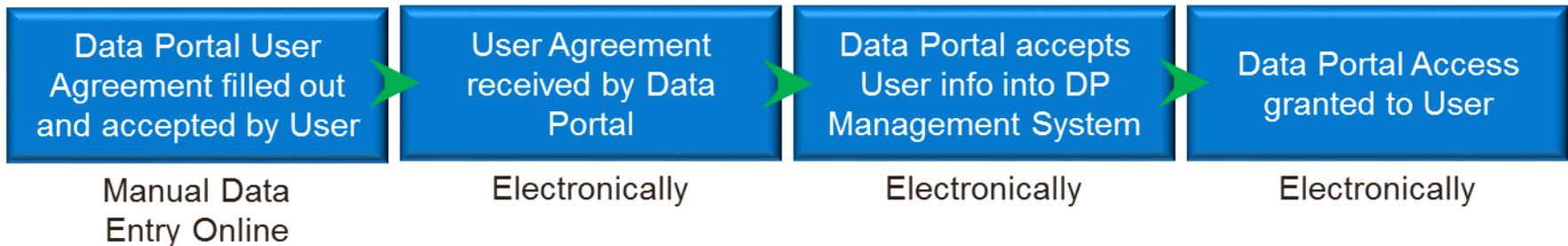
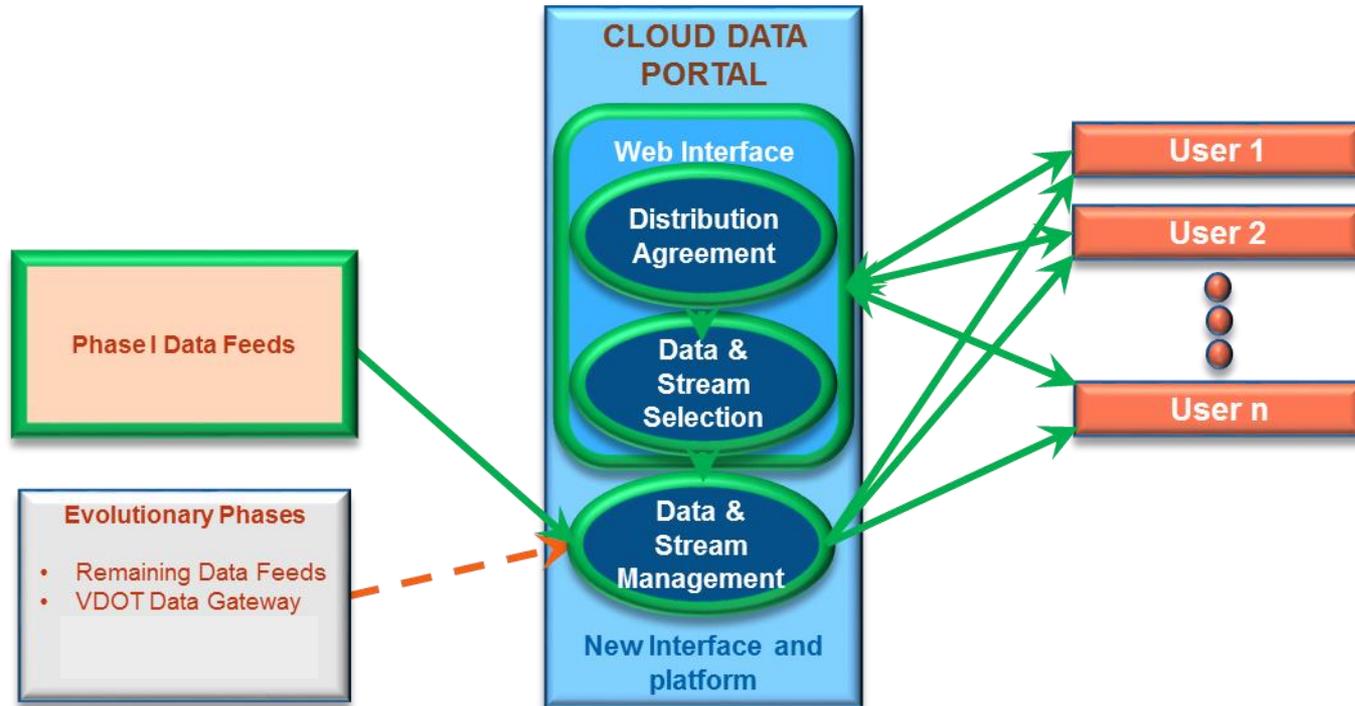
Cloud Data Portal Objectives

- **Accelerate the CAV technology development** by exchanging transportation data and video with private sector CAV business, application developers, and university partners.
- Provide all relevant VDOT data beyond current traffic operations data in one portal site.
- **Encourage auto manufacturer device, application, and business development** to increase the frequency, quality, and accuracy of data shared with private sector in Virginia.
- Improve 2-way data exchange for VDOT to publish and obtain data for internal use.
- **Simplify the process** to add new users and manage existing users.
- Serve as a national model for other state DOT's.



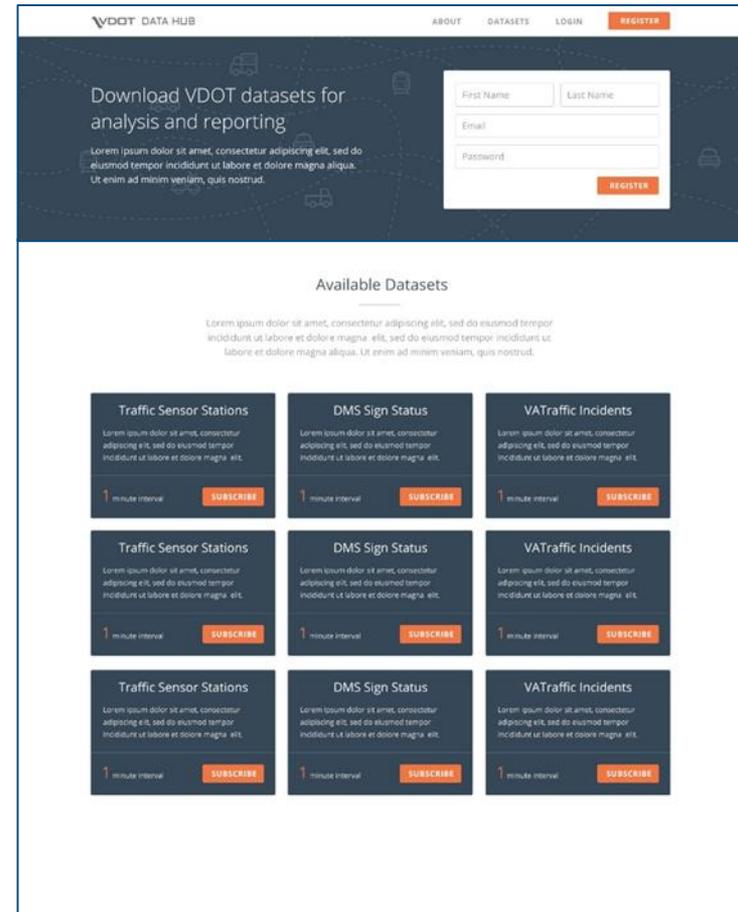
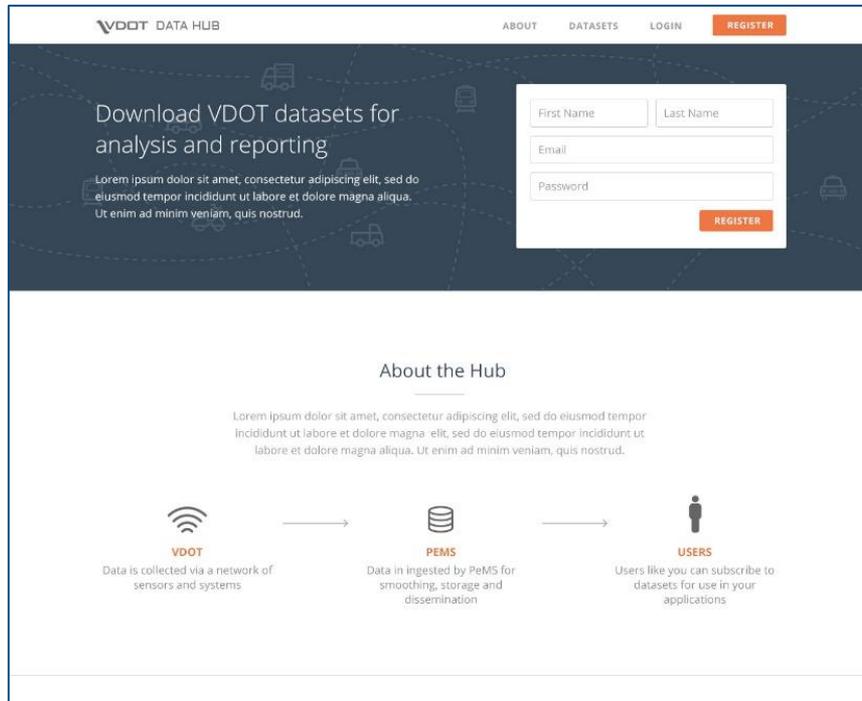
<p>(1) </p> <p>Advanced Traveler Information</p>	<p>(2) </p> <p>Work Zone Alerts for Drivers and Workers</p>	<p>(3) </p> <p>Incident Scene Alerts for Drivers</p>	<p>(4) </p> <p>Red Light Violation Warning System</p>	<p>(5) </p> <p>Queue Warning</p>	<p>(6) </p> <p>V2V – Forward Collision Warning</p>
<p>(7) </p> <p>V2V – Emergency Electronic Brake Light</p>	<p>(8) </p> <p>Parking Availability</p>	<p>(9) </p> <p>Probe Enabled Traffic Monitoring</p>	<p>(10) </p> <p>Integrated Traffic Signal System</p>	<p>(11) </p> <p>Transit Signal Priority</p>	<p>(12) </p> <p>Emergency Vehicle Preemption</p>

Cloud Data Portal Concept



Development Progress

- Design and Development Proceeding
 - User Interface is highest priority
- Working with VDOT IT on data access
- Draft User Agreement in review



VDOT Top Priority V2I Applications

Application	VDOT Data
1. Adv. Traveler Info	Traffic Incidents, Winter Road Conditions, Work Zone Info, Travel Time Info (processed), Managed Lane/HOV Data
2. Work Zone Alerts for Drivers	Work Zone Info (location, type, lanes)
3. Incident Scene Alerts for Drivers	Traffic Incidents (lane closures , speed reductions (VSL and detector data), queue length/delay info)
4. Red Light Violation Warning Sys.	Signal, Phase and Timing (SPaT) (NRO only)
5. Queue End Warning	Traffic Incidents, Congestion Data (travel time and volume data)
8. Parking Availability	Truck Parking, Commuter Park N Ride
9. Probe enabled Traffic Monitoring	Travel Time, HPMS data , CV data from vehicles
10. Integrated Traffic Signal System	Signal Location (static), SPaT/MAP (NRO only) , location correction
11. Transit Signal Priority System	Signal Location (static), SPaT/MAP (NRO only) , location correction
12. Emergency Vehicle Preemption	Signal Location (static), SPaT/MAP (NRO only) , location correction

Possible applications for other VDOT data

VDOT Data	Potential Applications/Benefits
13. Speed Zones	Vehicle navigation without road signs
14. Structure Exclusion Data	Truck navigation to eliminate bridge hits and damage
15. Snow Plow locations (later phase)	Vehicle navigation to reduce crashes
16. Future Bridge and Paving Schedules	Predictive travel time planning
17. CV Data collected from vehicles	Pavement condition monitoring
18. Managed Lane Info	Vehicle navigation and Predictive travel time planning
19. Congestion Heat Map	Predictive travel time planning
20. Pavement conditions and paving schedules	
21. Past Crashes (near real-time from DMV)	

Other considerations

- **Modified existing iPEMS solution**
 - **Compliant with Exec. Directive 6 and 7**
 - **Lowest risk**
 - **Allows early deployment**
- **Traffic Video will utilize existing TV&D distribution method due to high bandwidth (Skyline) and number of users**
- **Many data sets were designed for static use and conversion to real-time data requires changes in business processes**
 - **For example, speed zone database**
- **Our launch on June 30 is a beginning and improvements will be made over time.**